

# Grape Culture

IN

## Lewiston-Clarkston Valley

BY  
ROBERT SCHLEICHER

Grape-grower of twenty years' experience in this valley. Winner of gold medals, all first prizes, for grapes at the International Expositions at Omaha, Buffalo, St. Louis and Portland; open to world competition. Won honorable mention for exhibit of pure grape wines at the Buffalo Exposition, the twenty-first among six hundred competitors; at St. Louis, a bronze medal in a strictly international competition and with an international jury; at Portland, a silver medal



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## Adaptability of this Valley to Grape Culture

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It is always a surprise to people unacquainted with the climate of the valleys of the Snake and Clearwater rivers, in Washington and Idaho, to be told that the tender foreign varieties of grapes (*Vitis vinifera*) grow there in as great perfection as they do either in California, Europe or Asia. This surprise is often so great that it degenerates into doubt, and can be removed only by ocular demonstration. If one will take the trouble, however, to ascertain what is needed for the production of these varieties, he will find that this portion of the Pacific Northwest possesses those requirements to such a degree as to make it an ideal climate for that purpose.

### A QUESTION OF CLIMATE

11 Mr. 13 William Miller 2.  
The culture of the grape, being of such great commercial importance over the larger portion of Europe, has received more scientific study and research than any other fruit. Through years of continued observation, French scientists have ascertained the number of degrees of heat and daily mean temperature necessary to cause the vine to leaf out; also the heat necessary to make it bloom, and again the daily mean temperature, and the amount of sunshine required to ripen the fruit. They have found that it is important that for a month following the formation of the seed the mean temperature should not fall below 66 degrees Fahr., that 65 degrees is the lowest at which grapes will ripen, that the mean heat of the period between the beginning of

vegetation of the vine to the ripening of the fruit must be at least 59 degrees, and that the most important season is twenty days prior to the ripening of the fruit, during which time the mean daily temperature should be 73.5 degrees.

Now, to show that these valleys receive sufficient heat to perfectly ripen the grape, attention is called to the following table, compiled some years ago by Mr. John H. Evans, of Lewiston, to whom is due the credit for gathering most of his information from reports of the Chief Signal Officer of the United States.

The valley at the confluence of the Snake and Clearwater rivers is therefore compared with the best known grape-growing centers of California.

	April	May	June	July	Aug.	Sept.	Mean
Lewiston-Clarkston . .	60	66	73.5	81.5	75	60.1	69.3
San Jose, Cal. . . . .	59.7	61.9	66.2	66.1	66.2	67.7	64.6
Sacramento, Cal. . . .	58.6	61.4	67.8	68.3	67.1	63.4	64.4
Fresno, Cal. . . . .	63.5	69.6	79.5	82.6	82.2	75.6	75.5
Santa Clara, Cal. . . .	59.8	61.9	66.3	64.6	66.3	66.9	64.3
Los Angeles, Cal. . . .	62.2	62.6	66.4	70.8	71.6	72.6	67.7

From the above it will be seen that during the period of growth, from April to October, there is but one place in California where the mean temperature exceeds that of Lewiston-Clarkston.

Count de Gasparino, who is called the founder of agricultural meteorology, calls attention to the fact that not heat alone, but sufficient direct sunshine upon the plants is a requisite of perfect fruit ripening. The scope of this article does not allow of printing the comparative tables in full, but from the Signal Service reports we again find that in the number of clear days from April to

October, Lewiston is exceeded by only one place in California. If we take into further consideration that, being nearly 10 degrees of latitude further north than the points of comparison in California, the increased length of days during the summer in these valleys gives an average of three-quarters of an hour daily more sunshine.

Prof. E. J. Wickson, in his "California Fruits," quoting Tyndall, says that a sheet of vapor acts as a screen to the earth, being in a great measure impervious to heat, and therefore, "it is not necessary that there should be clouds to lessen the chemical effects of sun heat in fruit ripening; not only do clouds intercept sunshine, but watery vapor in the air, when to the eye the sun is as bright as ever, can absorb a large quantity of effective rays and so retard fruit ripening. Hence, an apparently sunny country, which has much invisible watery vapor in the air, may prove defective in fruit-ripening qualities." The following table, compiled from the reports of the Chief Signal officer, gives the mean relative humidity of the places named from April to October:

Dry

Atmosphere

Lewiston-Clarkston . . . . .	48.3
Los Angeles, California . . . . .	68.8
San Diego, California . . . . .	74
Sacramento, California . . . . .	60.9
Fresno, California . . . . .	49.8
New York City, N. Y. . . . .	72.5
Cincinnati, Ohio . . . . .	67.6
St. Louis, Mo. . . . .	80.1

From the above it is seen that the Snake and Clearwater valleys have the least relative humidity. There is no doubt that to the excessive atmospheric humidity and its neutralizing effect on the sunlight, together with the lack of sunshine, is due the failure of the foreign varieties of grapes in the Atlantic States.

Now, having shown that this climate possesses in an eminent degree all that is needed to make it perfect for grape-growing according to the requirements based upon researches of scientists, should any of these be fallacious or open to doubt, the fact remains indisputable that we produce in greatest perfection, not only the grapes that thrive in middle Europe, but those originated in Spain, Italy, Northern Africa and Asia; and we have no less authority than that of Colonel Brackett, Pomologist of the Department of Agriculture, who some years ago traveled out of his way to assure himself that grapes which were exhibited as Idaho grapes were really grown in Lewiston valley, and stated that after an exhaustive inspection of California vineyards, a few weeks previous to his visit, he had seen nothing there to excel, and little to equal, what he saw here.

## VARIETIES FOR DIFFERENT PURPOSES

The early plantings of grapes in this valley were mainly of Sweetwater and other Chasselas varieties, and Black Hamburg. While all of these, and especially the latter, are deservedly favorites for home consumption and shipment to near-by markets, their planting in the future is not to be recommended on any extensive scale. Commercial vineyards should be of those varieties which, besides being large and showy, have good keeping qualities and are hard enough of texture to stand shipment to distant markets. The best known among them are:

### Qualities for Shipping

**THE FLAME TOKAY.** While not of high quality, is of such large size, both in bunch and berry, and so attractive in appearance, and such a good shipper as well as immense bearer, that it has become the leading table grape shipped from California to eastern markets, where it outsells all other grapes. It colors

and ripens remarkably well here, especially in elevated situations. Next in importance we would place the

**WHITE MALAGA.** A very strong grower and heavy bearer, with good-sized bunches of large berries, which, owing to the looseness of the bunch, is a better keeper than the Tokay and fully as good a shipper, but, not being so attractive in appearance, does not command quite so good a price.

**RAMMONIA OF TRANSYLVANIA.** A late importation from Eastern Europe, which has proved itself a great success in the Snake and Clearwater valleys. Is a dark blue grape of immense size, not quite so good a shipper as the two foregoing, but which outsells all others wherever it has been marketed in the last few years. This variety is not grown in California to any great extent, probably because it was not introduced there, but has attracted more attention to the grape-growing possibilities of this section than any other variety.

**EMPEROR.** A large black grape of good shipping qualities, which has proven very unsatisfactory in some parts of California, and highly satisfactory in other parts; has been grown here for a number of years very successfully.

**MUSCAT OF ALEXANDRIA.** This is the only grape tried here which does not yield full crops regularly, owing to "coulure," or dropping off of the berries at blooming time in some seasons, yet is very valuable in locations where it thrives. It seems to do better on sandy river-bottoms than on higher ground.

**ROSE OF PERU.** While it ripens with the earliest, will hang on the vines until winter, and resists the damage done by fall rains better than any other; is worth a place in any vineyard. It is not adapted for long shipment.

**BLACK CORNICHON.** Has come to the front in the last few years in California as a leading late-shipping grape. It is successfully grown here and will likely prove of good value.



The list of good varieties which can be grown successfully here is not by any means limited to the above, but they are the ones that have been planted most extensively and have proven profitable. The writer has a collection of over fifty varieties on trial, from the hardiest grown in northern Europe to those originating in southern Europe and Asia, and a number of them have merits which make them deserving of more extensive planting. Notable among these is the Hunisa, a variety the cuttings of which were sent to the Department of Agriculture by a missionary from Aintab in Syria, in 1902, and reputed to be the best keeper of any grape known, being usually kept in good condition until March at its native home. This reputation is likely to be sustained in this climate, as far as one can judge from two years' observation.

## SOIL, EXPOSURES, METHODS OF PLANTING CULTIVATION, TRAINING, PRUNING, ETC.

The different soils of this valley, from the sandy river bottoms to the loamy hillsides, have all proven themselves good for grape culture, and different analyses show them to contain in proper and liberal proportions every element required to grow abundant crops for many years to come without the aid of fertilizers. The vine, however, appreciates good, deep soil and will grow and bear fruit in proportion to its supply of it; and there are hillsides overlooking both the Snake and Clearwater rivers, overlaid with several feet of good loose soil, rich in humus, a given area of which will probably, year after year, produce twice as much as poorer lands having but a few inches of vegetable soil overlying the hard-pan. The hillsides, besides having richer soil, have greater immunity from



late spring and early fall frosts, and will no doubt prove the choice locations for future planting wherever water for irrigation can be brought onto them.

Plowing to the depth of 12 to 15 inches will be sufficient preparation for vineyard planting on the sandy bottom-lands, but on the higher lands where the subsoil is harder or underlaid with clay, following the turning plow with a subsoiler and thereby loosening the soil to the depth of 20 inches or more will be found to prove a decided advantage, the good effects therefrom being appreciable for eight or ten years after planting.

Plant Rooted Vines      Either cuttings or rooted vines can be used for starting a vineyard, but while the latter cost several times as much as the former in cash outlay, when the uniform stand and more satisfactory growth of the rooted vines is considered, it is good economy to use them. There is quite a difference of opinion as to the distance to leave between vines and rows in planting a vineyard, but usually more room is given now than formerly. For strong-growing varieties of table grapes, such as those named above, we would advise planting in rows, vines 8 feet, and the rows 8 to 10 feet apart; the latter distance if it is expected to use two horses in cultivating.

Rows North and South      It is preferable in this climate to plant the rows north and south wherever practicable, as a protection of the crop from sunburn during the extreme heat of July and August. If, however, this is impracticable, the greatest care must be used not to do any summer pruning on the south side of the rows.

Water in Holes      It is advisable to use water in the holes in which the vines are planted, and if a good growth can be secured by cultivation alone without any more watering



The way Flame Tokay Grapes grow in Lewiston-Clarkston





Valley. Photographed in Mr. Schleicher's vineyard

the same season, and even during the second one, the vines will develop a much better root system, by striking deeper in the soil.

As it is a difficult and lengthy matter to lay down rules for pruning a vineyard, the scope of this article will not permit of it; but we might say to the intending planter of  
**Pruning** a vineyard that his knowledge of pruning will grow along with his vines if he will only give the subject careful thought and observe the practice of others.

## IRRIGATION

Irrigation of vineyards, and the amount of water needed is a local and specific question, and depends upon the following two conditions, which are: The amount of the seasonal rainfall, and the character of the soil and subsoil and its retentiveness. River-bottom vineyards with loose, gravelly subsoils may need three or four irrigations a year, while side-hill plantations in loam with clay subsoil may raise as good a crop with one irrigation, but with thorough and timely cultivation implied in both cases. It

**Acre-foot** will be safe to state, from results obtained from  
**Sufficient** practical experiments made here covering some twenty years, that an acre-foot of water, added to the rainfall, will be more than ample to secure a bountiful crop and keep the vines in the best of condition. This is about the amount of water, from 25 to 30 inches a year, that falls in the countries which are considered the most fruitful in the

**Better Than** world, with the advantage in this instance of the  
**All Rain** irrigation water being applied at the very time when it is needed, with very little waste by evaporation as compared with that which takes place when all the moisture is supplied by rainfall. In locations where water is plentiful in winter and scarce in summer, winter irrigation of

vineyards has proven a great success; a thorough soaking of the soil during the dormant season, followed by good cultivation during the period of growth, with possibly one irrigation in July just before the ripening of the fruit, has given better results than several irrigations during spring and summer.

## MARKETS AND MARKETING

The supply of grapes grown in this valley having been limited up to the present time, the market has been restricted to near-by towns and cities, and while grape-growing has been fairly remunerative, the profits to the grower will increase as the acreage planted in the valley becomes larger. The difference in transportation charges alone between express rates which the

**More Grapes** grower pays now, and car-load rates by freight,  
**More Profit** which he will pay when there are car-load lots to ship, is in most cases enough to make a difference of \$150 per acre a year in the net profits. The demand for good grapes, covering a season of three or four months, is limited only by the supply of a good article, and, with transportation charges as low as those given California growers, this valley can claim the whole United States for a market.

This section has suffered in the past, and is suffering yet, from unjust and discriminating express and freight rates, allowing California to lay down her products in the markets of

**Low** the northwest at rates denied to the local growers. The attention of those in charge of making  
**Freights** these rates has been called to their unfairness, and  
**Promised** relief has been promised for the future. With

all-rail communication bringing Lewiston-Clarkston within 12 to 14 hours of Portland and the Sound cities, as against 40 and 50 hours to the same places from grape-growing points in California, it is but fair to assume that whenever this valley pro-

duces large enough quantities to supply those markets, freight and express rates will be made which will remedy the present most unequal conditions.

## WINE-MAKING

The experiments in wine-making, conducted here for some years, have resulted in notable success; the dry wines of the

**Best Wines** Sauterne and Rhenish types having been pro-  
**North** nounced by connoisseurs as coming nearer to the European wines than any grown in California.

It has been known for hundreds of years that the best wines were produced near the northern limit of possible grape culture and mostly on the slopes overlooking large rivers. These conditions are met in an ideal way in the Lewiston-Clarkston valley.

Wines produced here were given high awards at Buffalo, St. Louis and Portland Expositions, and no less an authority than the late Prof. George Hussman, of Napa, California, for forty years the leading writer in the United States on grape-growing and wine-making, and father of Geo. C. Hussman, the present Pomologist in charge of viticultural investigations of the United States Department of Agriculture, writes under date of May 15, 1902, concerning a bottle of Idaho Sauterne sent him for his opinion: "I called in the best judge of wines

**Ours Equal** we have here. We tasted it together and pro-  
**the Best** nounced it a very good wine, equal to the best wines made in this county (Napa), which we claim

makes the best dry wines in the state. It is a good sound wine which ought to sell anywhere among wine-drinkers of the right sort; wine which makes glad the heart. At my age (74) it is highly gratifying to me to find that my efforts since 1850 in the cause of grape culture and the making of pure wine have not been in vain."



As these wines were made from grapes which have more of a reputation for table use than for wine-making, and as none of the makers had any previous experience in wine-making in other countries, and as the encouraging results so far are due entirely to soil and climate, there is justification for the belief that when wines made here within the last two years, from grapes used in making the celebrated growths of France and Germany, get age enough to develop their highest quality, there is a possibility of results that might realize the most sanguine hopes. At all events, there is a splendid field for intelligent experimentation in this line, and it may not be too visionary to dream of the slopes and hillsides of the Snake and Clearwater rivers being in the near future covered with thrifty vineyards, drawing on the accumulated fertility of the past ages, and transforming it into wealth, as have those on the hills of the Rhine and the Moselle, the Rhone and the Garonne, the quality of whose products have inspired poetry and song for the past thousand years, and made them the wealthiest sections of the world.

From an economic standpoint, the business of growing table grapes and that of wine-making go hand in hand, and every owner of a vineyard of any size should be prepared to take care of at least a small portion of his crop by pressing it into wine; or, if he has conscientious scruples in the matter, manufacturing it into unfermented grape-juice, which has lately become an article of almost general consumption.

Upon this, the moral side of viticulture, F. T. Bioletti, Assistant Professor of Viticulture in the University of California, who lately returned from a prolonged sojourn abroad on behalf of the viticultural interests of the state of Califor-



nia, made the following remarks before the State Farmers' Institute at Berkeley a short time ago. "No satisfactory reason has been given why the nations of Southern Europe are more

**Morality  
of Wine-  
Making**

temperate than those of the northern countries, except that they drink wine instead of ardent spirits. Drunkenness, which is the curse of the country districts of England, Germany and Scandinavia, is almost unknown in Spain, Italy and Southern France, especially in the wine-producing districts. My contention is not that wine will not intoxicate, but statistics prove that wine-drinking and sobriety go hand in hand, and whether or not wine has any direct influence in the cause of temperance, it certainly has no influence in the contrary direction. Anything which can be said against the use of wine by healthy, normal, human beings can be said with far more force and truth against the use of tea, coffee, or any of the numerous articles of our ordinary diet which, in excess, have deleterious effects.

## DISEASES OF VINES, PHYLLOXERA AND RESISTANT STOCKS

Grape-vines have been remarkably free from disease in this valley, mildew having so far made its appearance only for a season or two and having readily given way under the application of ground sulphur once or twice during the season.

The much-dreaded phylloxera, which has raised such havoc in the vineyards of Europe and California, has fortunately not been brought here yet, and, if proper care be taken not to import any vines from districts infected with it, it can forever be kept out. The laws governing the importation of nursery stock into both Washington and Idaho, if properly enforced by the Fruit Pest Inspectors of the several districts, will be ample protection. If, how-

**Inspection  
Rigid**

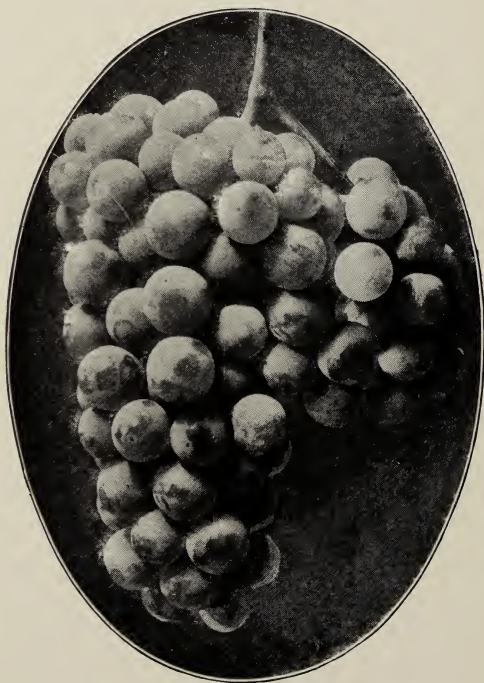
ever, in spite of all precaution, it should make its appearance in this valley, recourse would have to be had to what has proven the most successful method of combating it: the planting of resistant vines. A resistant vine is one which is capable of keeping alive and growing even when phylloxera are living upon its roots, and some of the wild vines growing in the Mississippi Valley have this quality. The fruit of these vines is, however, so undesirable that recourse must be had to grafting upon these root-vines of the varieties wanted, and thus use them only as stocks. This makes the initial cost of raising a vineyard several times as high as when vines can be raised on their own roots. In spite of this increased cost at the beginning, it would be

**Resistant  
Stocks** true economy to plant new and extensive vineyards with resistant stocks, but for the following reasons: While the European vine (*Vitis vinifera*)

is remarkable among cultivated plants for the wide range of soils in which it will succeed,—ranging from the lightest sands to heaviest clays, from dry hilltops to low moist plains,—this is not the case with the resistant stocks. Some are suited to rich, moist soils, others only to dry, rocky ones. Again, there is a lack of affinity between the *Vitis vinifera* and some resistant stocks, certain varieties doing well on some stocks and refusing to bear on others. This leaves an intricate problem of adaptation and affinity to solve for each different locality, and, until this is done in a thorough manner, it would be too expensive and risky to make large plantings with resistant stocks. Under the direction of the Experimental Station of the University of Idaho, the writer is at present testing ten different kinds of

**Experiments  
Under Way** resistant roots, also some grafted vines upon different stocks. These were procured from the University of California, with the kindly assistance of the viticulturists of that institution, selections being made

which, from their experience, would be most likely to prove successful in this locality. These experiments, when completed, with others which are contemplated, will in all probability give the knowledge necessary to put the vineyards of the valley upon the best possible resistant basis, if there should arise the necessity for it in future years. This necessity need not arise, however, if planters will procure their vines and cuttings from the vineyards here already in bearing, which are free from disease, and from which a list of varieties can be selected including the leading and best for the different purposes.



## Future of the Table Grape Business

The Secretary of the California Fruit Shippers' Association, in his report at the close of the very prosperous shipping season of 1905, calls particular attention to the increased demand in the eastern states for California grapes at good prices, and recommends the planting of larger acreage to keep up with the expanding markets.

In a late interview by the "Sacramento Bee," Mr. A. B. Humphrey, a prominent grape-grower and shipper of Sacramento county, just returned from a four months' tour of the Eastern and Middle-western States, where he went for the purpose of studying the grape market, methods of handling the crop, of diverting cars in transit and the conditions that must prevail to continue the splendid prices of the past seasons, says that he has returned stronger than ever in the belief of the impossibility of overdoing the table grape market.

In fact, the market for Tokays, Mr. Humphrey says, is practically in its infancy, so far as concerns the grower of the Tokay of superior quality and color. It is the attractive color, the deep rich crimson, that dealers first look for, and the Tokay that has this essential characteristic necessarily has the flavor.

Mr. Humphrey expressed surprise at the large number of eastern cities whose markets have never offered a California table grape for sale. "Why," said he, "if it were possible to supply the demand of one-half the undeveloped markets that I investigated, I am sure that those markets alone would consume every acre of table grapes grown in both San Joaquin and Sacramento coun-

Ample  
Market

ties." The "Pacific Rural Press" of February 17, 1906, says of this: "Such statements coming at this time from one of the biggest table grape shippers in California, should at least tend to allay any apprehension on the part of those who have feared overproduction."

Now, as every condition which works for the extension of the table grape industry in California applies as fully to this valley, both as regards the production of a superior article and the expanding markets, it is evident that no more profitable use can be made of every acre of land than planting it to choice table grapes, wherever the climatic conditions meet the necessary requirements.

In this connection, we might add that a grape exhibit from the Lewiston-Clarkston valley at the St. Louis Exposition in 1904 got as high an award as California, the coloring and flavor of the Tokays being admitted by California exhibitors to be equal to the finest their state could produce.

A display made by a grower\* of this valley at the Portland Fair, 1905, in competition with California, brought forth a  
None Finer letter from Prof. H. E. Van Deman, Ex-Pomologist of the Department of Agriculture, and President of the Horticultural Jury at the Lewis and Clark Exposition. He wrote: "No doubt you have received the notice of what I awarded you, and I wish you could have had more than one gold medal, for you deserved it. You made the best grape display at the Exposition. I was much pleased with the crispness and good flavor of some of the grapes you sent, etc., etc."

\* The grower referred to was Mr. Robert Schleicher.—PUBLISHER.

## The Grape-Growing Lands

in Lewiston-Clarkston valley lie on both sides of Snake river; on the Idaho side, east and southeast of Lewiston; on the Washington side, in the district known as Vineland, south and west of Clarkston. The more successful vineyards thus far established are located on northern and eastern slopes between 100 and 350 feet above the rivers. Two new areas of several thousand acres each are now being put under irrigation, between 300 and 1,000 feet above the rivers. It is believed that these newer lands will be not less favorable for grapes, and temperature records are being kept in connection with experimental vineyards in these areas to aid in determining this important fact. Successful growers are of the opinion that there is no question but that grapes will be grown successfully at 600 feet elevation above the rivers.





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VIEW OF VINEYARD OWNED BY ROBERT SCHLEICHER  
OVERLOOKING THE CLEARWATER RIVER